Electronic Version
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Claims

[c1] 1.- An electric distribution system for a vehicle with two networks at different voltage levels and an architecture in which at least a first of said networks is susceptible to being fed from the second voltage supply network through a CC/CC converter, one of said two networks being connected to a generator and at least one of said two networks being fed by energy storage means such as a battery, characterized in that it comprises several shunted CC/CC converters, connecting said first and second networks at different voltage levels, all of them connected at a common point or output, each one of whose CC/CC converters has a series or set of differentiated loads located in different areas of the vehicle assigned to it, belonging to at least the lower voltage network, the power that each one of said converters can supply being lower than that of the maximum consumption of all said loads it has assigned, such that the power supply to each load set will be carried out at certain moments at the expense of at least more than one of said different CC/CC converters or of a battery, and in that said converters, in order to supply different load groups located in different areas of the vehicle, are integrated in

a master/slave architecture controlled from a control center or master, including a microcontroller with the capacity to manage the power to be sent at all times to the loads by each one of said converters in a synchronized manner, the connection between CC/CC converters, slaves, and control center including at least one communication bus such as a CAN or VAN bus, by means of which the needs of each load group are reported.

[c2] 2.- A system according to claim 1, characterized in that each one of the CC/CC converters has at least one tapping point for detecting the supply current required by the loads to be supplied and processed by each CC/CC converter, whose information is sent to said control center integrating the master, through said communication bus.

[c3] 3.- A system according to claim 2, characterized in that all said shunted converters are equal.

[c4] 4.- A system according to claim 1, characterized in that each one of said two networks includes a common connection point or output of the different converters and is also fed from a battery and each one of the load groups whose supply is assigned to a corresponding converter includes a protection means based on fuses in at least some of the loads of each set.

[c5] 5.- A system according to claim 1, characterized in that each one of said two networks includes a common connection point or output of the different converters and is also fed from a battery and each one of the load groups whose supply is assigned to a corresponding converter includes a protection means based on controlled switching devices such as FET transistors in at least some of the loads of each set.

[c6] 6.- A system according to claim 1, characterized in that each one of said two networks includes a common connection point or output of the different converters and is also fed from a battery and each one of the load groups whose supply is assigned to a corresponding converter includes a protection means based on controlled fuses for some of the loads and based on controlled switching devices such as FET transistors for others of said loads of each set thereof.

[c7] 7.- A system according to claim 1, characterized in that said first network is a lower voltage level network fed from a first battery and said second network is a higher voltage level network fed from a second battery.

[c8] 8.- A system according to claim 2, characterized in that at least two of said several CC/CC voltage converters are

two-way converters.

[c9] 9.- A system according to claim 2, characterized in that said higher voltage network supplies a series of loads, also sectorized and associated to each one of said converters.

[c10] 10.- A method for electric distribution for a motorized vehicle with two networks at different voltage levels, wherein at least a first of said networks is fed from the second voltage supply network through a CC/CC converter, one of said two networks being connected to a generator and at least one of the two networks is fed by an energy storage means such as a battery, characterized in that it sends the power to the loads through a plurality of CC/CC converters in shunted arrangement between said two networks at different voltage levels with equalization of the outputs thereof by means of control of the output of each converter from a control center acting as master of a master/slave architecture, with the different CC/CC converters as slaves, integrating a microcontroller with the capacity to manage the power to be sent at all times to the loads on the part of each one of said converters in a synchronized manner, and the connection between CC/CC converters and control center including at least one communication bus, such as a CAN bus.

[c11] 11.- A method according to claim 10, characterized in that it carries out a permanent detection of the intensity required by each load set and processed by the corresponding converter assigned to said group, whose information is sent through said bus to the system's control center or master.